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Non-invasive monitoring of subclinical and clinical actinic keratosis of face and scalp under topical treatment with ingenolmebutate gel 150 mcg/g by means of reflectance confocal microscopy and optical coherence tomography: new perspectives and comparison of diagnostic techniques.


ABSTRACT
Actinic keratosis (AKs) corresponds to the earliest stage of in-situ squamous cell carcinoma and arises on chronically sun-exposed skin. Around the clinically evident AKs, the apparently healthy epidermis may contain different grades of atypia that can be detected by non-invasive imaging techniques such as reflectance confocal microscopy (RCM) and optical coherence tomography (OCT). Subclinical actinic keratosis (sAKs) have captured increasing interest as a potential target of field therapies. The aim of this study was to evaluate in vivo the changes in the field cancerization undergoing treatment with topical ingenolmebutate by combining RCM and OCT. Twenty patients with field cancerization of the face and scalp were treated with ingenolmebutate gel (150 mcg/g) for three consecutive days on an area of 25 cm² containing at least 2 AKs, 2 sAKs and 2 apparently healthy sites. One-hundred-and-twenty lesions were evaluated through clinical investigation and clinical, dermoscopical, RCM and OCT images at day 0, 4, 14, and 56 based on the diagnostic criteria for AKs. Main pathological features improved in both AKs and sAKs, in particular the epidermal thickness measured by OCT and the epidermal atypia graded by RCM. Local skin reactions arose predominantly in the lesional area compared to healthy skin (Figure 4). A complete clearance was detected in 58% for AKs, and in 55% and 72% for sAKs measured by RCM and OCT, respectively (Figure 3). Both OCT and RCM allow the morphological representation of field cancerization including subclinical lesions and provide complementary information. Ingenolmebutate is effective not only in clinically evident but also in sAKs. The differences in local skin reaction highlight the potential selectivity of the treatment. This article is protected by copyright. All rights reserved. KEYWORDS: actinic keratosis; cancerization field; dermoscopy; ingenolmebutate; non-melanoma skin cancer; reflectance confocal microscopy; squamous cell carcinoma; subclinical lesions; topical therapy of skin cancer
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